

July 31, 2015

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51.366 Data Report for 2014

Dear Brian:

Attached are the data from the northern Virginia I/M program in response to the requirements of CFR 40 Section 51.366, Data and Analysis Reporting, for calendar year 2014. We have included an explanatory narrative below. Throughout, DEQ assumes only Initial test result data are requested, unless otherwise specified.

Narrative:

51.366 (a)

For each requirement in (a), five sets of data sheets are submitted for each vehicle type entitled: all, P, T, M, and H. T = LDT <6001 lbs. GVWR and M = LDT 6001 – 8500 lbs. GVWR. For 2014 calendar year data, for each vehicle type there is one sheet providing counts and percentages. All data are taken from the VID reporting database from which spurious and test VINs have been removed (e.g., TESTOPUS). Raw data are queried from a contractor-provided web application and are copied to Excel summary sheets entitled 2014 EPA 40 CFR 51.366.a1{07292015}..., etc. , where {07292015} is the date of the query version.

Procedures for counting vehicles have changed somewhat. Previously we had counted a test as initial if there had been no initial test for 18 months. We now believe this resulted in some double counting of some VINs. The current procedure looks back 21 months. Consequently the number of vehicles tested appears to be fewer than when using the previous method. We believe the revised procedure is more in line with the actual number of vehicles tested for comparison with DMV registration counts. See 51.366 (d) (1)(ii) below. Another change occurred in counting vehicles with unknown outcome. We now look to see if any pass or waiver has occurred to date. Previously we only looked until the end of the evaluation year. The revised method more accurately measures “disappeared” vehicles. However, the counts may vary slightly depending on the date the query is run.

51.366 (a) (1) Number of vehicles tested by model year and vehicle type.

A total of 848,778 vehicles received an initial I/M test or an initial remote sensing NOV or clean screen in 2014. This is an increase of 1.4% from 2013 when 2013 is counted using the new procedures. Passenger vehicles (LDGV) comprised 56.1% of the fleet, light duty trucks up to 6,000 lbs GVWR comprised 29.0%, light duty trucks 6,000 lbs to 8,500 lbs GVWR comprised 13.1%, and heavy duty vehicles 8,501 – 10,000 lbs (HDGV) comprised 1.9%. The average age for passenger vehicles was 8.0 years, 8.1 for T trucks, 7.1 for M trucks and 8.8 for HDGV. This is about the same fleet in terms of vehicle age than we had in 2013. DEQ also breaks down the number of vehicles tested by Test Type Performed. Overall, 95.9% of the IM fleet received only an OBD test, 3.0% received an ASM test, 0.8% received a TSI test and 0.2% received both an OBD and

tailpipe test. A chart is provided showing the model year distribution. It is apparent that vehicle registrations fluctuate from year to year.

DEQ has had to create a “workaround” in order to determine the number of initial tests per unique vehicle. This is because the analyzer system (NVAS) allows tests off-line, which can result in multiple tests being keyed as Test Type = I for initial by the inspector. As a workaround, a field, Test Type Update was created. For the VID reporting database, a procedure populates the Test Type Update field based on a scan of previous existing records. This procedure should result in only one initial test per VIN per test cycle. The Test Type Update field also provides for identifying waiver results that are duplicates or not final results (i.e., more than one waiver result per test cycle or a waiver result followed by a passing result) as well as identifying the final test in a test cycle. The Test Type Update procedure was amended in 2015.

In 2005, DEQ started OBD testing (phased in May through September) and in August of 2006 the On-Road Emissions (ORE) program was started. Consequently, four new Test Type Performed results were added: O = OBD, B = OBD + ASM, C = OBD + TSI, and R designating either an ORE fail with a notice of violation (NOV) or a pass if a clean screen notice was authorized. ORE tests are valid initial tests although they may occur out of cycle. The “B” and “C” tests are applicable for an ORE confirmation test, wherein both an OBD test (if applicable) and a tailpipe test are required to pass. The ORE program was not operational in 2014 so no “R” tests are in the 2014 data.

The DEQ VID application is also able to flag certain OBD vehicles with known OBD problems to also receive a tailpipe test. We started using this feature in January 2013. Most of these vehicles received “B” tests.

51.366 (a) (2) By model year and vehicle type the number and percent of vehicles:

(i) Failing initially, per test type.

Overall 29,736 vehicles failed their initial IM test. The overall fail rate for 2014 was 3.5%. The fail rate was greatest for “H” vehicles, 5.6%, and least for “M” vehicles, 3.2%. “T” and “P” vehicles were 3.6 % and 3.5% respectively. The most prevalent (most vehicles) failing model year was 2002; the highest fail rate (up to 24 years old) was 19.5% for model year 1991.

(ii) Failing the first retest per test type.

Overall percent of vehicles failing their first retest for 2014 was 12.9%. This is as a percent of vehicles which received a first retest. “H” vehicles had the highest first retest fail rate of 21.6%. As a percent of vehicles failing their initial test the overall percent of vehicles failing their first retest for 2014 was 10.8%. Not all vehicles that fail their initial test receive a retest because they may be sold or decommissioned.

(iii) Passing the first retest per test type.

The overall percent of vehicles passing their first retest for 2014 was 87.1% as a percent of vehicles which received a first retest. As a percent of vehicles failing their initial test the overall percent of vehicles passing their first retest was 72.5%. The percentages based on the total initial tests do not add to 100% because some vehicles never return for a retest.

(iv) Initially failed vehicles passing the second or subsequent retest per test type.

The overall percent of vehicles passing their second or subsequent retest for 2014 was 9.6%. This is as a percent of vehicles which failed their initial test. As a percent of vehicles which failed a first retest the percentage is 88.8%.

(v) Initially failed vehicles receiving a waiver

A total of 469 waivers were issued in 2014. The overall waiver rate for 2014 was 1.6% as a percent of vehicles failing the initial test. The waiver rate was largest for "H" vehicles, 3.0%.

(vi) Vehicles with no final outcome (regardless of reason)

Previously DEQ calculated this by calendar year based on Initial fails minus last retest pass and waivers. These are now determined by querying the vehicles with an initial fail with no known final outcome (retest pass or waiver) and looking ahead to determine if the vehicle ever received a pass or waiver because it often takes many months for vehicles to get repairs. Consequently the count of vehicles with no final outcome varies depending on the query date.

Using this method, 4,777 vehicles, or 16.1% of the initial fails, failed an initial test in 2014 without receiving an eventual pass or waiver before August 27, 2015. This percentage is in terms of percent of initially failing vehicles. However, for initial tests in 2013, the figure is 13.3% as of August 27, 2015. From 2001 to 2013 the percentage ranges from 12% to 13.3%. This seems to be fairly consistent. For the year 1999 the figure was 14.7% and 14.9% in 2000, higher than average due to enhanced program startup.

VA has determined that these are typically retired vehicles. Overall, the number of retired vehicles is consistent with the number of new vehicles plus vehicles entering the area, considering growth. Unusual results (negative or large percentages) for a particular test type performed, vehicle type and model year can be due to a combination of small category totals.

(vii –x) Not applicable

(xi) Passing the on-board diagnostic check

Data are queried directly from the VID. The number of actual initial OBD passing tests is 790,832 or 96.9% overall pass rate.

(xii) Failing the on-board diagnostic check test

Data are queried directly from the VID. In 2014 25,058 vehicles failed their initial OBD test or 3.1%. "H" vehicles had the highest fail rate, 4.1%

(xiii) Failing the on-board diagnostic check and passing the tailpipe test

The Virginia analyzer software has the capability to conduct dual testing in certain circumstances. DEQ has the ability to require that both the OBD and tailpipe test be passed for certain vehicle models by means of a flag in the vehicle lookup table. Also, OBD vehicles that fail an On-Road Emissions test are required to receive a confirmation test which includes both an OBD and tailpipe test. Currently the VID is not able to distinguish test types "B" and "C" between ORE confirmation tests and tests done on problem OBD vehicles. Therefore no

data analysis has been done to determine relative tailpipe versus OBD test pass versus fail.

(xiv) Failing the on-board diagnostic check and failing the tailpipe

See (xiii)

(xv) Passing the on-board diagnostic check and failing the I/M gas cap evaporative system test

DEQ no longer required the gas cap pressure test.

(xvi) Failing the on-board diagnostic check and passing the I/M gas cap evaporative system test

DEQ no longer required the gas cap pressure test.

(xvii) Passing both the on-board diagnostic check and I/M gas cap evaporative system test

DEQ no longer required the gas cap pressure test.

(xviii) Failing both the on-board diagnostic check and I/M gas cap evaporative system test

DEQ no longer required the gas cap pressure test.

(xix) MIL is commanded on and no codes are stored

The percentage is calculated relative to total records with the MIL commanded on. Overall, the MIL is commanded on and DTCs are not stored for only 277 records or 1.24% of records with MIL commanded on. H vehicles 1996 to 2004 have a high percentage of MIL on with no DTCs because many of these vehicles are not fully OBD-II compliant. In VA an OBD test is started but goes to TSI if there are OBD anomalies. In this situation, they do not fail for OBD but the OBD results are logged on the record. There were 108 such records that were H vehicles with, "C" tests that had not DTCs. Without these records the overall MIL on - no codes percentage is only .075%.

There was also a relatively high percentage of P, T and M vehicles from 2010 - 2013. Further investigation as to the models causing this is warranted.

(xx) MIL is not commanded on and codes are stored

The percentage is calculated relative to total records with the MIL not commanded on. Overall, only 60 or .01% of the records with MIL not commanded on had DTCs stored.

(xxi) MIL is commanded on and codes are stored

The percentage is calculated relative to total records with the MIL commanded on. Overall, 98.76% of the records with MIL commanded on had DTCs stored.

(xxii) MIL is not commanded on and codes are not stored

The percentage is calculated relative to total records with the MIL not commanded on. Overall, 99.99% of the records with MIL not commanded on had no DTCs stored.

(xxiii) Readiness status indicates that the evaluation is not complete for any module supported by on-board diagnostic systems

The percentage is calculated relative to total OBD initial tests. In Virginia, vehicles that have more than the allowed monitors not ready are rejected from testing. This results in an overall test result of "Abort." The number of vehicles with non-aborted not-ready status is counted and the percentage is determined relative to the number of complete OBD tests, i.e., not including those "rejected from testing." Overall 9.6% of the initial OBD tests had at least one monitor not ready. There is a significant decrease with model year 2001 and newer: 1996 – 2000 averaged 29.6% tests with at least one monitor not ready, but only 7.7% for model years 2001 - 2013. For H vehicles the percentage with at least one monitor not ready averaged 25.9% for model years 1996 - 2007 perhaps due to the fact that some vehicles that were not fully OBD-II compliant. H vehicles 2008 and newer were not ready only 5.7% of initial tests.

51.366 (a) (3) The initial test volume by model year and test station

The data include tests back to model year 1968 for all calendar years. Virginia required testing back to model year 1968 until July 1, 2000 when the testing requirement was changed to include only vehicles 24 year old and newer. Some vehicles over 24 years old still may continue to receive emissions tests even though they are not required to do so. Vehicles back to model year 1968 are subject to the ORE program and may receive a confirmation test and retest after repairs.

Data are sorted by station number and by test volume. There were 539 stations in operation in 2014 but not all of these stations are necessarily currently active; but they were active part of 2014. The station type, test volume and average model year tested are included. This helps distinguish new testing stations, fleets and dealerships which have atypical clientele or test volume. The average number of yearly initial tests per station was 1575.

51.366 (a) (4) The initial test fail rate by model year and test station

Data can be sorted by station number and by fail rate. 149 stations had an overall fail rate less than 2%. The station use code is given. By far the lowest fail rate was private fleets, 1.6%. Used car dealerships had the highest fail rate, 4.7%.

51.366 (a) (5) The average increase or decrease in tailpipe emission levels for HC, CO, and NOx after repairs by model year and vehicle type for vehicles receiving mass emissions test.

Not required of ASM programs. Also, only 4% of the IM fleet received a tailpipe test.

51.366 (b) Quality assurance report

These data are compile by the Northern Virginia compliance staff and are included in the attached sheet, 2014 EPA 40 CFR 51.366 (b)(c)&(d)(1)(v) Quality assurance & Quality control & Enforcement report.pdf, for calendar year 2014.

Regarding Item 51.366 (b)(3)(ii) - Covert audits conducted with the vehicle set to fail any combination of two or more test types, could not be reasonably determined since two (or more) test types are currently performed only on remote sensing ORE program failures during the confirmation test and some particular OBD models that are flagged for a tailpipe test. CTs are actually audited one-by-one

to ensure the correct test types are performed. Doing CTs covertly is not possible and only limited OBD models exist that are flagged for a tailpipe test..

51.366 (c) Quality control report

These data are compile by the Northern Virginia compliance staff and are included in the attached sheet, 2014 (b)(c)&(d)(1)(v) Quality assurance & Quality control & Enforcement report.doc, for calendar year 2014.

51.366 (d) Enforcement report

51.366 (d) (1)(i) An estimate of the number of vehicles subject to the program including the results of an analysis of the registration database.

DMV registration count data were taken from an annual VA DMV summary report by jurisdiction which is compiled every year on July 1 to estimate the number of vehicles subject to the IM program. For 2014, DMV registration data was also available by VIN. In 2011 DEQ performed a VIN decode study on VINs and found that DMV had incorrectly categorized several vehicle types, particularly LDTs designated as PV - passenger vehicles. Also, only HDGVs under 10,001 pounds GVWR are subject to IM whereas all HDGV are included in the DMV summary data. We updated the allowance made for HDGVs over 10,000 GVWR. Using this proportion from the 2011 VIN decode, the number of vehicles subject to IM as of 7/1/2014 was 1,549,791.

51.366 (d) (1)(ii) The percentage of motorist compliance based upon a comparison of the number of valid final tests with the number of subject vehicles.

DMV reports registration data to DEQ in two forms: summary data by jurisdiction and statewide registration data by VIN. Historically DEQ has determined the number of vehicles subject to IM using the DMV summary data (adjusted for the percentage (20.1%) of HDGV over 10,000 which are not subject to IM, and vehicles over 24 years of age).

A comparison is given based on one-half of the vehicles registered as LDGV, LDGT1, LDGT2, LDDV, LDDT or HDGV based on the DMV 7/1/2014 registration data for vehicles age 2 - 24. Some vehicles newer and older receive IM tests but these are not counted it the comparison. We have not attempted to compare counts by vehicle type.

There are complications with the concept of comparing DMV registration counts with I/M initial test counts due to the transient nature of the registration database. The northern Virginia area has a more transient population than many areas. This is evidenced by the greater number of initial emission tests than registrations, particularly for vehicles 2 to 4 years old. Older model years tend to have more registrations than initial inspections. This is due to a larger proportion of older vehicles that are due to retire and vehicles that have already retired (dead records). The number of "retired vehicles" is commensurate with the number of new and used vehicles sold.

Overall, the ratio of initial tests for vehicles age 2 to 24 years is 101.1% of the number of registrations divided by two. In 2013 it was 104.1%; in 2012 it was

99.8%.; 2010 and 2011 it was 101.2%. In 2009 it was 100.4% and in 2008 it was 98.2%. This illustrates that there is variability from year to year and that some inspections may occur outside of the registration cycle, particularly for newer vehicles that may get inspected upon resale by the dealer even though a new inspection is not required for registration. Also vehicles may be sold out of state.

Given the irregularities in registration counts and in counting the number of initial tests, DEQ believes that the ratio in 51.366 (d) (1)(ii) is not a good measure of motorist compliance. A better method would be to compare actual DMV registrations by VIN with the IM test record to determine if the vehicles actually registered that are subject to IM receive a final pass or waiver.

51.366 (d) (1)(iii) The total number of compliance documents issued to inspection stations.

DEQ does not issue "compliance documents" which are interpreted to be inspection stickers to the stations because VA has a registration denial system.

51.366 (d) (1)(iv) The number of missing compliance documents

DEQ has no "compliance documents" per se (i.e., stickers or controlled VIRs) and is not aware of any missing inspection records on the IM database.

51.366 (d) (1)(v) The number of time extensions and other exemptions granted to motorists

No exemptions are issued by DEQ for vehicle subject to the program. Time extensions, or "out of state deferrals," are available under certain circumstances to vehicles out of the area at the time the inspection is due. In addition Virginia DMV may issue a one time, one month temporary registration to enable a vehicle to get repairs.

Out of state deferrals issued	92
Exemption letters issued for non-conforming vehicles (NOT subject to program)	3
Exemption letters issued for overweight vehicles >10,000 lbs GVWR (NOT subject to program)	126
Exemptions issued for overweight diesel vehicles (OBD II) (NOT subject to program) (GVWR > 8,500 lbs.)	154

51.366 (d) (1)(vi) The number of compliance surveys conducted, number of vehicles surveyed and the compliance rates found in such audits.

No compliance surveys have been done per se. DEQ assumes EPA is referring to surveys to determine whether vehicles are operating with valid, unexpired registrations or are registered outside the IM area. DEQ has relied on Virginia Dept of State Police records which have indicated that driving unregistered incidence is under 1% and DEQ has used this figure in modeling.

The ORE program has an out-of-area high emitter component wherein high emitting vehicles registered out of the IM area are notified and required to be tested if they are determined to be operating primarily within the IM area. The ORE program has been on hold in 2014. DEQ will be collecting remote sensing data again by the end of 2015. DEQ believes these data can be used as a substitute for parking lot surveys and in fact should be more robust. DEQ will develop methods to analyze the remote sensing data with respect to determining potential unregistered or incorrectly registered vehicles.

51.366 (d) (2) Registration denial based enforcement programs shall provide the following additional information:

(i) A report of the program's efforts and actions to prevent motorists from falsely registering out of the program area or falsely changing fuel type or weight on the vehicle registration, and the results of special studies to investigate the frequency of such activity.

DEQ identifies high emitting vehicles using the ORE program that are registered outside the IM area but are determined to be "operated primarily" inside the IM area. Similarly, vehicles observed by remote sensing that are incorrectly registered with, for example, a GVWR over 10,000 pounds or a fuel type that is not subject to, are still subject to the remote sensing high emitter identification program because a VIN decode is used to determine vehicle eligibility – not the DMV registration data. DEQ issues Notices of Violation (NOVs) to such vehicles and requires them to get a confirmation test and if necessary be repaired. The ORE program was on hold in 2014 due to a changeover to a new remote sensing contract.

With respect to falsely registering out of the program area, three observations are required to deem a vehicle subject to ORE if it is registered out of the IM area. In the past, few out-of-area vehicles met this criterion. We expect the future increase in remote sensing will produce better coverage of any such vehicles (see 51.366 (e) (1)).

With respect to changing fuel type or weight on the vehicle registration, DEQ receives registration data from DMV every July 1. To the extent possible, this data is analyzed to determine if vehicles are correctly registered with respect to weight and fuel. Complete analysis requires doing a VIN decode to determine correct weight and fuel. DEQ last performed a complete VIN decode in fall of 2011. In the future, our VID contractor will perform a complete VIN decode yearly.

(ii) The number of registration file audits, number of registrations reviewed and the compliance rates found in such audits.

VIN Decode

ESP-Data Solutions performed a VIN decode for DEQ using VIN-Power on the VINs of vehicles registered by DMV as of 7/1/2011 in jurisdictions within Virginia. A detailed analysis was done on registrations within the IM

area. The results were compared with the DMV summary data which DEQ receives each July. The results were reported in previous EPA reports. Similar analyses will be done every year in the future starting in 2015. A VIN decode is necessary to do a complete audit of registration database elements such as GVWR and fuel. In lieu of a full VIN decode, DEQ performs an audit of the DMV registration data for vehicles in the IM area.

DMV Registration Data Analysis

DEQ receives a file from DMV each July listing all registrations statewide including the VIN, emissions status, emissions due date, registration due date and various vehicle parameters. Emissions status is a field that contains the most recent IM pass or waiver result or various DMV codes signifying exemptions or extensions. When an inspection pass or waiver is sent to DMV it will overwrite any existing emissions status code. The VIN data analysis focuses on 5 possible DMV data error categories: vehicle weight, fuel, "C" emissions status, "M" emissions status and null emissions status. These categories were each examined to determine the number of vehicles that potentially did not receive a required emissions test. There is some overlap between the categories. For each category, model years 2012 – 2014 were not considered since most of these vehicles would not have yet required an emissions test to register.

For this analysis, from the DMV statewide registration data DEQ creates an Access database table that excludes trailers and eliminates duplicates. From this a table, "IM Area Veh VINs" is created for garage jurisdictions within the IM area. This table is used to cross-check for the IM area jurisdictions, the data in the DMV summary data. The table "IM Area Veh VINs" (after excluding motorcycles, motorbikes and "EQ") is used to analyze vehicle weigh anomalies.

Then a "Vehicles Exempt" table is created of vehicles that are exempt from IM. These include permanent exemptions issued by DEQ ("C" vehicles), hybrid vehicles exempt in Virginia based on 50mpg or better EPA city mileage, and known dedicated alternative fuel models. Finally a table "IM vehicles" is created which excludes "Vehicles Exempt" and includes only model years subject to IM and records where all of GVWR, GVW and empty weights are subject to IM. This "IM vehicles" table is used to analyze the other anomalies, fuel and emissions status for vehicles potentially missing from IM.

Vehicle Weight – 1043 potential missing vehicles

DMV prompts vehicles for inspection based on weight, fuel, and vehicle type. DMV exempts a vehicle from IM if either the gross vehicle weight (GVW) on record or empty weight (EW) is over 10,000 for gasoline or 8,500 for diesels. It is not clear how DMV uses GVWR and GVWR is not available for all vehicles. We believe DMV may use GVWR for diesel trucks. DMV generally obtains GVWR upon first titling from the certificate of origin, whereas GVW is an owner input and subject to error.

DEQ looked at records of vehicles model year 1990 – 2012 that were subject to IM based on the GVWR on the DMV record (i.e., gasoline powered up to 10,000 GVWR and diesel up to 8,500 GVWR) but for which GVW was over these limits, and presumably not prompted for emissions by DMV.

There were 1600 such vehicles potentially erroneously registered. Of these 434 had received a pass or waiver. However, 1057 had null emissions status indicating no IM test had ever been performed. There were only 15 diesel vehicles in this null group and based on the vehicle type 11 of these were clearly errors in GVWR entry. A VIN check of the remaining 4 indicated they were in fact 8500 -10,000 or over 10,000 and thus not subject to IM. Apparently DMV prompts diesel vehicles based on GVW since there were 40 vehicles with emissions status of pass that had GVWR over the IM limits but GVW within the IM range. There does not seem to be a problem with over-reporting GVW for diesels.

For gasoline vehicles the situation is different. Excluding a few vehicle of the vehicle models that are generally over 10,000 GVWR, there were still 1043 vehicles that may be subject to IM that had a null emissions status and would not be prompted for an emissions test based on GVW. It should be noted that there were only 20 of these vehicles with an emissions due date less than July 2014 so the remaining 1023 might still receive an inspection. However they were still apparently registered as of July 2014 without an inspection.

Fuel – 257 potential missing vehicles

DMV exempts vehicles titled with certain fuel types: C-compressed natural gas; E- electric; P-liquified petroleum gas. (One record had Z-propane although DMV no longer uses this code.) These are supposedly dedicated alternative fuel vehicles exempt from IM. There were 596 such vehicles after excluding certain known dedicated alternative fuel models. Some of the remaining vehicles appear to be actually dual fuel, which are supposed to be IM tested (e/g/, CHEV CAVALIER), and some may be not be alternative fuel at all. In fact 339 had an emissions status of P which indicates that the owners did not realize their vehicle was exempt per DMV. Still there are 257 vehicles with null emissions status that may be subject to IM, although only 16 had an emissions due date earlier than July 2014.

“C” Emissions Status – 108 potential missing vehicles

When a vehicle is prompted for emissions by DMV but the vehicle is not subject to IM, DEQ notifies DMV that the vehicle is exempt and DMV enters a “C” in the emissions status field of the DMV vehicle record. DEQ keeps track of VINs for which a “C” letter to DMV was issued. (These DEQ-issued “C” vehicles are entered in an exclusion table along with certain hybrid vehicles exempt from IM and known dedicated alternative fuel models and are not counted in the analysis.) In the July 2014 DMV registration data there were 928 VINs with a “C” that were not exempted by DEQ and only one appeared to be legitimately exempt from biennial IM. Only 26 had an emissions due date earlier than July 2014.

Null Emissions Status – 5899 potential missing vehicles

Using the DMV weight selection criteria EW and GVW and GVWR < 10,000, and excluding model years 2012 – 2014 there were still 5899 vehicles with null emissions status meaning no emissions test on the DMV record. This situation was brought to DMV's attention in 2013 and procedures were put in place to correct DMV practices for mail-in registration renewals. The situation has since greatly improved although it will take two years to fully rectify. Only 410 had emissions due dates earlier than July 2014.

There are 303 of 2001-2003 Prius models with null emissions status. Only Prius models 2004 and newer are exempt from IM in Virginia based on mpg. Apparently DMV had been exempting all model years. DMV has since been advised to correct this.

"M" Emissions Status – 5263 potential missing vehicles

DMV reportedly uses emissions status "M" for new vehicles not yet subject to IM. However there seem to be many older vehicles with this code. It appears that an "M" code is equivalent to Null. There doesn't seem to be any pattern except that there were 259 Prius models 2001-2003. DMV seems to have exempted these vehicles, incorrectly as previously noted.

Emissions due date = 99999999 – 13 potential missing vehicles

DMV uses a registration expiration date of 99999999 for permanent plates. Typically these are vehicles owned by local government agencies. For permanent plates generally DMV uses 99999999 as the emissions due date as well. There were 9,647 vehicles with 99999999 for emissions due date. Of these 8523 had either an emissions status of pass, waiver or an exemption/extension. 1124 had no IM test or exemption/extension. We do not know when these vehicles would be scheduled for inspection. Local government agencies are required to have their vehicles tested and many have testing facilities in house.

There were 784 vehicles with an emissions due date of 99999999 and a non-permanent registration expire date. Of these, only 13 vehicles had null or "M" emissions status and only 3 had a registration due date before July 2014.

51.366 (e) Additional reporting requirements.

51.366 (e) (1) Any changes in program design, funding, personnel levels, procedures, regulations, and legal authority.

The Virginia legislature has established expanded clean screening to be phased in up to a maximum of 30%. This will be an expansion of the existing On-Road Emissions program and will consequently greatly increase the number of ORE observations. It is expected that the number of high emitting vehicles identified will significantly increase. DEQ expects the expanded ORE program to be operational by the end of 2015.

51.366 (e) (2) Any weaknesses or problems identified within the two-year period

As mentioned, DEQ has worked with DMV to correct DMV registration practices concerning mail-in registrations. DMV now requires a valid current inspection whereas previously any prior inspection record would suffice. This correction will take another year to fully complete as evidenced in the still large number of null and "M" emissions status as discussed above.

Another issue that arose in 2014, DEQ worked with DMV to change the transaction identification number (TIN) used to validate vehicle inspection reports. The previous TIN was easily fabricated. The new TIN proved to be very effective which resulted in many registrations being rejected by DMV due to bad VIN or model year information on the DMV record. DMV has been able to change the vehicle records in these cases, but it still takes time for DEQ staff to deal with these cases. The volume is decreasing and hopefully